

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An apparatus comprising:

a cellular map of cellular communication cells in a geographic area, the cellular map stored in the apparatus;

a road map of vehicular roads in substantially the same geographic area, the road map stored in the apparatus; and

a traffic flow analyzer coupled to the cellular map and the road map to determine vehicular traffic in at least one part of the geographic area based on analysis of occupancy data ~~corresponding to~~ identifying which of a plurality of cellular devices are present in which of the cellular communication cells.

Claim 2 (original): The apparatus of claim 1 wherein the at least one part of the geographic area comprises at least one cell of the cellular communication cells.

Claim 3 (original): The apparatus of claim 1 wherein the at least one part of the geographic area is expressed in geographic terms including a reference to at least one of the vehicular roads.

Claim 4 (previously presented): The apparatus of claim 1 further comprising:
means to determine a delta over time in the occupancy data for at least one cell of the cellular communication cells.

Claim 5 (previously presented): The apparatus of claim 1 further comprising:
a communication link to transmit information concerning the vehicular traffic.

Claim 6 (currently amended): The apparatus of claim 5 wherein the communication link comprises:

a link to cellular devices which are coupled to the cellular communication cells to provide the information from the traffic flow analyzer to the cellular devices.

Claim 7 (previously presented): The apparatus of claim 5 wherein the communication link comprises:

means to transmit the information onto the internet.

Claim 8 (original): The apparatus of claim 1 further comprising:

a processor coupled to the traffic flow analyzer.

Claim 9 (previously presented): The apparatus of claim 1 further comprising:

a map overlay mechanism to correlate the cellular map and the road map.

Claims 10 - 16 (cancel)

Claims 17 – 20 (canceled)

Claim 21 (currently amended): A method comprising:

determining a delta in occupancy data of at least one cell of a cellular communication system, the occupancy data obtained from a plurality of cellular devices within the at least one cell; and

determining, according to the delta in occupancy data, spatial movement of cellular devices in communication with the cellular communication system.

Claim 22 (original): The method of claim 21 wherein the spatial movement comprises substantially planar movement of vehicular traffic.

Claim 23 (original): The method of claim 21 wherein the spatial movement comprises three-dimensional movement of aeronautical traffic.

Claim 24 (currently amended): The method of claim 21 further comprising:

determining the delta according to a ~~proper~~ selected subset of available occupancy data for a cell.

Claim 25 (currently amended): The method of claim 24 further comprising:
randomly selecting the ~~proper~~ selected subset.

Claim 26 (currently amended): The method of claim 24 further comprising:
algorithmically selecting the ~~proper~~ selected subset.

Claim 27 (original): The method of claim 21 further comprising:
publishing information representing the spatial movement.

Claim 28 (original): The method of claim 27 wherein the publishing comprises:
transmitting the information to cellular devices in communication with the cellular
communication system.

Claim 29 (original): The method of claim 28 wherein the information comprises:
a graphical depiction of traffic on roads in the cell occupied by, and neighboring cells of,
at least one cellular device.

Claim 30 (original): The method of claim 28 wherein the information comprises:
travel routing advice.

Claim 31 (currently amended): The method of claim [[27]] 28 further comprising:
selecting, to receive the transmitted information, substantially only those cellular devices
which are subscribed to receive the transmitted information.

Claim 32 (original): The method of claim 27 wherein the publishing comprises:
sending the information to an entity which is not a cellular device in communication with
the cellular communication system.

Claim 33 (original): The method of claim 32 wherein the entity comprises at least one
of a police department, a department of transportation, a news bureau, a radio station, a
television station, a server computer, and an internet website.

Claim 34 (original): The method of claim 21 further comprising:

constructing a set of vectors representing vehicular traffic between cells of the cellular communication system.

Claim 35 (original): The method of claim 34 further comprising:

constructing a linear boundary map describing where vehicular roads connect cells.

Claim 36 (original): The method of claim 21 further comprising:

in response to at least one of the delta and the spatial movement, adjusting functionality of the cellular communication system.

Claim 37 (original): The method of claim 36 wherein the adjusting functionality comprises:

increasing capacity of a cell.

Claim 38 (original): The method of claim 37 further comprising:

in response to at least one of the delta and the spatial movement, predicting a future change in occupancy of a cell; and

the cell whose capacity is increased is the cell whose occupancy is predicted to have a future change.

Claim 39 (currently amended): A method of operation of a traffic estimation system connected to a cellular communication system which is in communication with a plurality of cellular devices, the method comprising:

receiving cell occupancy data of the plurality of cellular devices corresponding to plural cells of the cellular communication system from the cellular communication system;

determining which of the cellular devices represented by the cell occupancy data are moving between cells of the cellular communication system;

determining which cells the moving cellular devices are moving between; and

converting the moved-between cell determination into a vehicular roadway representation indicating which roads the moving vehicles are likely to be driving on.

Claim 40 (original): The method of claim 39 further comprising:

ignoring cellular devices which are not traveling between cells for a sufficient time such that it is likely that they are stationary or only driving short distances within their respective cells.

Claim 41 (currently amended): The method of claim 39 further comprising:

analyzing only a ~~proper~~ selected subset of available cell occupancy data; and
extrapolating from the resulting analysis to achieve an estimated result for a larger set of occupancy data.

Claim 42 (currently amended): The method of claim 41 further comprising:

randomly selecting the ~~proper~~ selected subset.

Claim 43 (currently amended): The method of claim 41 further comprising:

algorithmically selecting the ~~proper~~ selected subset.

Claim 44 (original): The method of claim 39 further comprising:

publishing information representing the vehicular roadway representation.

Claim 45 (original): The method of claim 44 wherein the publishing comprises:

transmitting the information to the cellular communication system.

Claim 46 (currently amended): The method of claim ~~[[44]]~~ 45 wherein the publishing comprises:

transmitting the information to at least one of the cellular devices.

Claim 47 (original): The method of claim 46 further comprising:

selecting to receive the transmitted information substantially only those cellular devices which are subscribed to receive the transmitted information.

Claim 48 (original): The method of claim 39 further comprising:
performing system validation analysis upon anonymized individual cellular devices.

Claim 49 (currently amended): A method comprising:
receiving a request for an area traffic analysis in a specified area;
categorizing cellular devices in the specified area;
filtering out cellular devices not recently in other areas;
capturing cellular devices recently arrived from other areas;
eliminating cellular devices departing to other areas;
reconciling a result with results from nearby areas to produce a final result;
providing the final result to an entity from which the request was received.

Claim 50 (original): The method of claim 49 further comprising:
producing a cell-based vector set; and
converting the vector set into road map format data.

Claim 51 (original): The method of claim 50 further comprising:
making a qualitative interpretation of the road map format data as a traffic flow estimation.

Claim 52 – 57 (canceled)

Claim 58 (previously presented): The apparatus of claim 1, wherein the traffic flow analyzer is further to determine the vehicular traffic in light of the cellular map and the road map.

Claim 59 (previously presented): The apparatus of claim 1, wherein the traffic flow analyzer is to categorize the occupancy data based on movement between the cellular communication cells.

Claim 60 (previously presented): The apparatus of claim 1, wherein the traffic flow analyzer is to aggregate the occupancy data to determine the vehicular traffic.

Claim 61 (currently amended): ~~The cellular communication device of claim 10~~
apparatus of claim 1, wherein the traffic flow analyzer is coupled to determine the vehicular traffic based on movement between cells of the cellular ~~system~~ communication cells.

Claim 62 (currently amended): ~~The cellular communication device of claim 10~~
apparatus of claim 1, wherein the traffic flow analyzer is coupled to aggregate the ~~cell~~ occupancy data to determine the vehicular traffic.

Claim 63 (new): The apparatus of claim 1, wherein the road map is defined in terms of the cellular map.